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Research Paper

Income Trends in Canada 1980-2000 User's Guide

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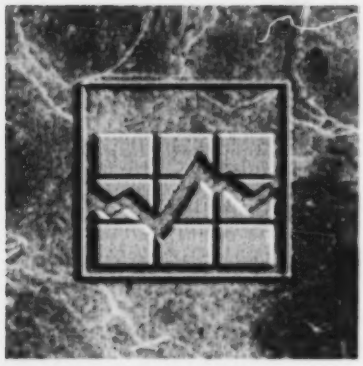

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Income Trends in Canada 1980-2000 User's Guide

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Income trends in Canada (1980- – User's guide

Abstract:

This user's guide provides a detailed description of CD-ROM *Income Trends in Canada* (13F0022XCB). It also provides a glossary, a description of the major concepts as well as an overview of the data source, the Survey of Labour and Income Dynamics (SLID).

Income Trends in Canada (1980-) contains 45 cross-classified income tables, covering the period 1980 to 2000. Most tables include estimates for Canada, the 10 provinces and 15 census metropolitan areas (CMAs). Major topics included in the tables are income distributions and inequality, earnings of men and women, income tax, government transfers, low income and sources of income.

Moreover, Beyond 20/20 software used in this product allows users to execute very easily common tasks done by analysts and researchers: browse rapidly data, select data of interest, graph or map them or simply save them in a worksheet. Then, from instantaneous graph, it is very easy to find out trends and pull out highlights.

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1. Introduction

Income Trends in Canada is an extensive collection of income statistics on CD-ROM, covering topics such as income distributions, income tax, government transfers, and low income. The data are drawn from two household surveys: the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID). Historical data prior to 1996 are drawn from the SCF and data since 1996 are taken from SLID.

This companion guide to the CD-ROM *Income Trends in Canada* provides a complete list of the tables and directions for getting started. It also contains notes and definitions, a description of the data sources, survey methodology and data quality, and a section called "Related Products and Services". These three sections can also be found at the back of the publication *Income in Canada* (Catalogue number 75-202 XPE/F).

In addition to provincial detail, many of the tables present estimates for the 15 largest Census Metropolitan Areas (CMAs), as follows: Halifax, Quebec, Montreal, Ottawa-Hull, Toronto, St.-Catharines-Niagara, Hamilton-Burlington, Kitchener-Waterloo, London, Windsor, Winnipeg, Calgary, Edmonton, Vancouver, Victoria. Due to the sample size limitations and sampling variability, estimates for urban areas are less reliable and are subject to larger errors than provincial and national estimates. Given the variability of the annual estimates, users are cautioned against drawing conclusions from single year-to-year comparisons alone.

Income Trends in Canada uses Version 6.1 of the Beyond 20/20 Browser software for accessing and manipulating tables. See the section in this guide called "Getting Started" for more information.

2. What you should know

A. Cell suppression and reliability of small data cells

Cell suppression has been applied to the tables as necessary to take into account the lower reliability of data for small population groups. (Refer to the section "Sources, Methods and Estimation Procedures" for more information on suppression and data quality). In certain cases, particularly where the geographic area covered is small in terms of population, or where any other characteristic used to define the population is rare, the reliability of the statistic may be too low to publish. Suitable rules of reliability were used to screen the data.

In a few table views, the number of suppressed data points may make the entire table view somewhat unusable. While the tables could have been designed to eliminate certain categories or dimensions from the outset, this would most likely mean simultaneously eliminating some usable content. Instead, the approach has been to include all views of the table (no elimination of any categories of any dimensions), and rely on cell-by-cell data suppression to screen data that are not reliable.

B. Geographic detail below the province level

There is a difference in the CMA boundaries used by the two surveys. The latest revised data from the SCF used definitions of CMA areas based on the 1996 Census of Population. The SLID uses, for the time being, the 1991 Census CMA boundaries. Not all CMAs appearing in the standard tables changed in the 1996 Census as compared to the 1991 Census. For those that did, the boundary changes accounted for population changes of less than 1% except in three cases: Montreal, +2.6%; Ottawa-Hull, +2.3%; and Winnipeg, +1.2%. Excluding any other factors, this would tend to make the SLID counts for these CMAs lower than the SCF counts.

C. Missing values for characteristics other than income

While both the SCF and SLID have complete data on all respondents for age, sex, family relationships and income characteristics, only the SCF has complete data without missing values for all labour market characteristics and education. (The SCF was conducted as a supplement to the Labour Force Survey, which provided the base labour data entirely edited and imputed.) To the extent that there are missing values in a dimension, identified as the category "don't know", there could be an undercount in any or all of the other categories. If the undercount in SLID is substantial, a break could appear between the two periods (the period up to 1995 and the period since 1996).

3. Table Titles

Series 100 – Earnings

Table	Title
T101	Distribution of earnings by sex, for all earners, Canada, Provinces and CMAs, 1980-2000
T102	Average earnings in 2000 constant dollars of women and men and female/male earnings ratios by work activity, Canada, Provinces and CMAs, 1980-2000
T103	Estimated number ('000) of earners by sex and work activity, Canada, Provinces and CMAs, 1980-2000
T104	Female/male earnings ratios (%), for full-year, full-time workers by age, marital status and education, Canada, Provinces and CMAs, 1980-2000
T105	Distribution and average total income in 2000 constant dollars of husband-wife families, showing number of earners, Canada, Provinces and CMAs, 1980-2000
T106	Average earnings in 2000 constant dollars and estimated number of persons by major occupation groups, showing age, sex and educational attainment, Canada, Provinces and CMAs, 1986-2000
T107	Average earnings in 2000 constant dollars and estimated number of persons by major industry groups, showing age, sex and educational attainment, Canada, Provinces and CMAs, 1986-2000

Series 200 – Market income

Table	Title
T201	Distribution of market income for economic families, unattached individuals and all units, Canada, Provinces and CMAs, 1980-2000
T202	Average market income in 2000 constant dollars by selected economic family types, Canada, Provinces and CMAs, 1980-2000
T203	Median market income in 2000 constant dollars by selected economic family types, Canada, Provinces and CMAs, 1980-2000

Series 300 – Government transfers

Table	Title
T301	Government transfers in 2000 constant dollars by after-tax income quintiles for economic families, unattached individuals and all units, showing average transfers, implicit rates of transfers, shares of aggregate transfers, Canada and Provinces, 1980-2000

Series 400 – Total income

Table	Title
T401	Distribution of total income for economic families, unattached individuals and all units, Canada, Provinces and CMAs, 1980-2000
T402	Distribution of total income for individuals, Canada, Provinces and CMAs, 1980-2000
T403	Average total income in 2000 constant dollars by selected economic family types, Canada, Provinces and CMAs, 1980-2000
T404	Average income received by income sources (recipients only) by age, for economic families, unattached individuals and all units, showing number of recipients, aggregate and average income in 2000 constant dollars, Canada, Provinces and CMAs, 1980-2000
T405	Total income shares and upper limits in 2000 constant dollars by total income quintiles for economic families, unattached individuals and all units, Canada and Provinces, 1980-2000
T406	Total income shares and upper limits in 2000 constant dollars by total income quintiles and sex for individuals, Canada and Provinces, 1980-2000
T407	Average income received by income sources (recipients only) by age and sex, for individuals, showing number of recipients, aggregate and average income in 2000 constant dollars, Canada, Provinces and CMAs, 1980-2000
T408	Distribution of total income for census families and persons not in census families, Canada, Provinces and CMAs, 1980-2000
T409	Average total income in 2000 constant dollars for selected census family types by living arrangement, Canada, Provinces and CMAs, 1980-2000
T410	Average total income in 2000 constant dollars for selected census family types, Canada, Provinces and CMAs, 1980-2000
T411	Median total income in 2000 constant dollars by selected economic family types, Canada, Provinces and CMAs, 1980-2000

Series 500 – Income tax

Table	Title
T501	Income tax in 2000 constant dollars by after-tax income quintiles for economic families, unattached individuals and all units showing average tax, implicit rates of tax, shares of aggregate tax, Canada and Provinces, 1980-2000

Series 600 – After-tax income

Table	Title
T601	Distribution of after-tax income for economic families, unattached individuals and all units, Canada, Provinces and CMAs, 1980-2000
T602	Distribution of after-tax income for individuals, Canada, Provinces and CMAs, 1980-2000
T603	Average after-tax income in 2000 constant dollars by selected economic family types, Canada, Provinces and CMAs, 1980-2000
T604	After-tax income shares and upper limits in 2000 constant dollars by after-tax income quintiles for economic families, unattached individuals and all units, Canada and Provinces, 1980-2000
T605	Median after-tax income in 2000 constant dollars for selected economic family types, Canada, Provinces and CMAs, 1980-2000

Series 700 – Tables with multiple income concepts

Table	Title
T701	Averages and shares in 2000 constant dollars by market income quintiles, total income quintiles and after-tax income quintiles for economic families, unattached individuals and all units, Canada and Provinces, 1980-2000
T702	Averages and rates of market income, government transfers, total income, income tax, after-tax income in 2000 constant dollars by selected economic family types, Canada and Provinces, 1980-2000
T703	Average market income, total income and after-tax income in 2000 constant dollars by after-tax income quintiles for economic families, unattached individuals and all units, Canada and Provinces, 1980-2000
T704	Averages, shares and implicit rates of income tax and government transfers in 2000 constant dollars by after-tax income quintiles for economic families, unattached individuals and all units, Canada and Provinces, 1980-2000
T705	Gini coefficients of market income, total income and after-tax income by selected family types, Canada and Provinces, 1980-2000
T706	Average market income, total income and after-tax income in 2000 constant dollars by adjusted after-tax income quintiles, showing family size adjustment, Canada and Provinces, 1980-2000

Series 800 – Low income

Table	Title
T801	Low income cutoffs before and after tax, 1980-2000
T802	Persons in low income before and after tax, showing prevalence and estimated number, Canada, Provinces and CMAs, 1980-2000
T803	Families in low income before and after tax by age and sex of major income earner (before 1996 = head of family), Canada, Provinces and CMAs, 1980-2000
T804	Families in low income before and after tax, showing prevalence, estimated number and average income gap in 2000 constant dollars for selected family types, Canada, Provinces and CMAs, 1980-2000
T805	Income gap: averages and aggregates as % of market income for economic families, unattached individuals and all units, Canada, Provinces and CMAs, 1980-2000
T806	Transitions of persons in and out of low income, before and after tax, by age, sex and education, Canada and Provinces, 1993-2000
T807	Percentage and estimated number of persons in low income before and after tax by age, sex and educational level, showing persistence of low income, Canada and Provinces, (Panel 1) 1993-1998

Series 900 – Background tables

Table	Title
T901	Estimated number ('000) of persons by selected economic family types, Canada, Provinces and CMAs, 1980-2000
T902	Estimated number ('000) of families by selected economic family types, Canada, Provinces and CMAs, 1980-2000
T903	Estimated number ('000) of persons by selected census family types, Canada, Provinces and CMAs, 1980-2000
T904	Estimated number ('000) of families by selected census family types, Canada, Provinces and CMAs, 1980-2000

4. Getting Started

When you open the "Data Browser" in Beyond 20/20, you will find the table of contents or the FIND dialog box. Within this box, there are three other dialog boxes, called CATEGORIES, NAME and TITLE.

CATEGORIES: There are nine categories of tables listed here, corresponding to different income concepts or topics organized according to section 2 of this guide.

NAME: After selecting one or more categories, this box lists the short titles of all tables included in the highlighted categories. To see all tables in all categories, click on "ALL" button at the top right of the FIND box.

TITLE: By clicking once on a table name in the NAME box, the TITLE box displays the title for this table. To open the selected table, click twice in the NAME box or click on the OK button in the FIND box.

5. Notes and Definitions

Income Definitions

This section reviews the definitions of the main income concepts and their components. In order to highlight the relationships between them, this section is organized according to the "Classification of Income Sources", shown as a table under "Total income", below.

Total income
Total income refers to income from all sources including government transfers and before deduction of federal and provincial income taxes. It may also be called income before tax (but after transfers). All sources of income are identified as belonging to either market income or government transfers.

Table A
Classification of Income Sources

Total income
- Market income
  - Earnings
    - Wages and salaries
    - Self-employment income
      - Farm
      - Non-farm
  - Investment income
  - Retirement pensions
  - Other income
- Government transfers
  - Old Age Security and Guaranteed Income Supplement/Spouse's Allowance
  - Canada Pension Plan/Quebec Pension Plan benefits
  - Child tax benefits
  - Employment Insurance benefits
  - Workers' compensation benefits
  - GST/HST Credit
  - Provincial/territorial tax credits
  - Social assistance
  - Other government transfers

While a justification of the definition of income is not attempted here, some important inclusions and exclusions are noted.

• The concept of income covers income received while a resident of Canada or as relevant for income tax purposes in Canada. This excludes some, but not all, foreign income.

• Retirement income received as a regular pension or annuity during retirement is included, while cash withdrawals from private pension plans, including Registered Retirement Savings Plans (RRSPs), prior to retirement, are excluded.

• Realized capital gains from financial investments are excluded.

• In the CSNA and the present classification, taxes on capital gains are included in

income taxes, as are taxes on RRSP withdrawals. Both capital gains (the taxable portion thereof) and RRSP withdrawals figure in the calculation of taxes, but are not part of total income in the CSNA or in this classification.

• This classification includes all refundable tax credits and benefits, including those that are not considered for income tax purposes, such as child tax benefits, the Goods and Services Tax Credit/Harmonized Sales Tax Credit, and other provincial or territorial tax credits. There are other, smaller differences between total income here and that defined for tax purposes (see "Other income" and "Other government transfers").

• Contributions to Employment Insurance and the Canada and Quebec Pension Plans, both federal programs, are not included in income taxes, nor are they deducted from income to arrive at after-tax income. However, the Canadian System of National Accounts recently revised its definition of taxes on production to include these payroll taxes, in accordance with international recommendations on national accounting.

Market income
Market income is the sum of earnings (from employment and net self-employment), net investment income, (private) retirement income, and the items under "Other income". It is equivalent to total income minus government transfers. It is also called income before taxes and transfers.

Earnings
This includes earnings from both paid employment (wages and salaries) and self-employment.

Wages and salaries
These are gross earnings from all jobs held as an employee, before payroll deductions such as income taxes, employment insurance contributions or pension plan contributions, etc. Wages and salaries include the earnings of owners of incorporated businesses, although some amounts may instead be reported as investment income. Commission income received by salespersons as well as occasional earnings for baby-sitting, for delivering papers, for cleaning, etc. are included. Overtime pay is included.

For historical reasons, data previously published from the SCF up to reference year 1997 were always adjusted to exclude the income of individuals and families whose major source of income was military pay and allowances, if they were not living in barracks. Military personnel living in barracks were not part of the target population to begin with, nor are they now, in SLID. The SCF data have now been readjusted back in time to include military income of those not living in barracks, making the data consistent with the target population for all years, in either survey. (Certain specified tables on the SCF CD-ROM products for 1996 and 1997 were already produced on this basis, but were not widely used.)

Self-employment income
This is net self-employment income, i.e., after deduction of expenses. Negative amounts (losses) are accepted. It includes income received from self-employment on own account, in partnership in an unincorporated business, or in independent professional practice. Income from roomers and boarders (excluding that received from relatives) is included. Note that because of the various inclusions, receipt of self-employment income does not necessarily mean the person held a job.

Self-employment income is subdivided into farm self-employment income and non-farm self-employment income. Farm self-employment income is reported by individuals who operate their own or a rented farm, either on own account or in partnership. Included are money receipts from the sale of farm products as well as related supplementary and assistance payments from governments. Income in kind is excluded.

Investment income
This includes interest received on bonds, deposits and savings certificates from Canadian or foreign sources, dividends received from Canadian and foreign corporate stocks, cash dividends received from insurance policies, net rental income from real estate and farms, interest received on loans and mortgages, regular income from an estate or trust fund and other investment income. Realized capital gains from the sale of assets are excluded. Negative amounts are accepted.

Retirement pensions
This is retirement pensions from all private sources, primarily employer pension plans. Amounts may be received in various forms such as annuities, superannuation or RRIFs (Registered Retirement Income Funds). Withdrawals from RRSPs (Registered Retirement Savings Plans) are not included in retirement pensions. However, they are taken into account as necessary for the estimation of certain government transfers and taxes. For data obtained from administrative records, income withdrawn from RRSPs before the age of 65 is treated as RRSP withdrawals, and income withdrawn from RRSPs at ages 65 or older is treated as retirement pensions. Retirement pensions may also be called pension income.

Government transfers
Government transfers include all direct payments from federal, provincial and municipal governments to individuals or families. See the table "Classification of Income Sources" for a list of the government transfers identified separately in the latest reference year. It should be noted that many features of the tax system also carry out social policy functions but are not government transfers per se. The tax system uses deductions and non-refundable tax credits, for example, to reduce the amount of tax payable, without providing a direct income.

Child tax benefits
Federal child tax benefits began in 1993 and replaced both the federal Family Allowances and the Child Tax Credit. Several provincial and territorial programs have since been introduced, in addition to Quebec family allowances which already existed before 1993. To be eligible, a person must have the primary responsibility for the care and upbringing of one or more children under the age of 18. Most benefits are calculated by setting a maximum amount per family or per child and reducing that total by a certain percentage of the family's net income. The programs which were explicitly accounted for in the data for 2000 were: the federal basic benefit and National Child Benefit Supplement (together called the Canada Child Tax Benefit), the Newfoundland and Labrador Child Benefit, the Nova Scotia Child Benefit, the New Brunswick Child Tax Benefit, the New Brunswick Earned Income Supplement, the Quebec *Allocation familiale*, the Quebec *Allocation à la naissance*, the Ontario Child Care Supplement for Working Families, the Saskatchewan Child Benefit, the Alberta Family Employment Tax Credit, the BC Family Bonus, and the BC Earned Income Benefit.

Old Age Security (OAS) benefits
The Old Age Security (OAS) pension is targeted to Canadian residents aged 65 and over. OAS recipients who have little or no other income may also receive the federal Guaranteed Income Supplement (GIS); and their spouses, if aged 60 to 64 (and not yet eligible for OAS and GIS themselves), receive the Spouse's Allowance.

Canada Pension Plan (CPP) and Quebec Pension Plan (QPP) benefits
The CPP and QPP are compulsory contributory social insurance programs that provide a source of retirement income and protect workers and their families against loss of income due to disability or death.

Employment Insurance benefits
Employment Insurance is a federal program which includes the following types of benefits: regular unemployment benefits, sickness benefits, maternity and parental benefits, and benefits for persons taking approved training courses or participating in job creation or job-sharing projects. To qualify, the claimant must have ceased receiving employment income and have worked a minimum number of weeks or hours of insurable employment over the preceding period.

Social assistance
Social assistance covers many provincial and municipal income supplements to individuals and families. It is usually provided only after all other possible sources of support have been exhausted.

Workers' compensation benefits
Workers' compensation is provided to protect all full-time and part-time employees from loss of salary due to work accidents or occupational diseases and help them to pay their medical expenses and other costs.

Goods and Services Tax/Harmonized Sales Tax Credit
This credit was introduced in conjunction with the Goods and Services Tax in 1990. It is intended to offset the GST/HST for lower income families and individuals. In Nova Scotia, New Brunswick and Newfoundland and Labrador its name was changed to the Harmonized Sales Tax Credit in April 1997 when the administration of the tax was combined with the provincial sales tax.

Provincial/territorial tax credits
Included here are refundable tax credits other than those for children (included with child tax benefits). Some are designed to help low income individuals and families to pay property taxes, education taxes, rent and living expenses, and so on. Provincial sales tax credits such as the Quebec Sales Tax Credit and the Newfoundland and Labrador HST Credit are included. The Quebec abatement, although refundable, is not included here but rather with income taxes.

Other government transfers
This includes government transfers not included elsewhere, mainly any other non-taxable transfers. In SLID, these amounts are included with "Other income". This is partly because the coverage of any transfers not taxed through the income tax system is low. In the interviews of both SCF and SLID, there may be under-reporting of these transfers, which are mainly collected using an open question. Nonetheless, the types of transfers which have come under this heading include: training program payments not reported elsewhere, the Veteran's pension, pensions to the blind and the disabled, regular payments from provincial automobile insurance plans (excluding lump-sum payments), and benefits for fishing industry employees.

Other income
This sub-total includes all items of market income not included elsewhere. Among them are support payments received (also called alimony and child support). The coverage of other items depends at least to some extent on the method of income data collection, whether from administrative income tax records or by interview. Those items which are included on line 130 of the T1 tax return are well covered. These include, but are not restricted to, retiring allowances (severance pay/termination benefits), scholarships, lump-sum payments from pensions and deferred profit-sharing plans received when leaving a plan, the taxable amount of death benefits other than those from CPP or QPP, and supplementary unemployment benefits not included in wages and salaries.

Income tax
Income tax is the sum of federal and provincial income taxes payable (accrued) for the taxation year. Income taxes include taxes on income, capital gains and RRSP withdrawals, after taking into account exemptions, deductions, non-refundable tax credits, and the refundable Quebec abatement. In the Survey of Labour and Income Dynamics, the data are either taken directly from administrative records or estimated based on aggregate data from administrative records, as this yields better results than the amounts reported by interview.

After-tax income
After-tax income is total income, which includes government transfers, less income tax. It may also be called income after tax.

Family Definitions

Dwelling
In general terms a dwelling is defined as a set of living quarters. A private dwelling is a separate set of living quarters with a private access. A collective dwelling may be institutional, communal or commercial in nature. Of the different types of collective dwellings, only communal dwellings are covered in the SLID and the SCF.

Household
A household is defined as a person or group of persons residing in a dwelling.

Adults
Adults are defined in SLID as 16 or older as of December 31st of the reference year, and in SCF they are defined as 15 or older at the time the person entered the Labour Force Survey sample, which was approximately 6 months prior to the interview in April. The impact of this conceptual difference is negligible.

Economic families, unattached individuals, and all units
An economic family is defined as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption. An unattached individual is a person living either alone or with others to whom he or she is unrelated, such as roommates or a lodger. The total of economic families and unattached individuals may be referred to as either "all units" or "economic families composed of one or more persons".

Census families and persons not in census families
The term "census family" corresponds to what is commonly referred to as a "nuclear family" or "immediate family". In general, it consists of a married couple or common-law couple with or without children, or a lone-parent with a child or children; furthermore, each child does not have his or her own spouse or child living in the household.

SLID uses a slightly different definition of census families from that used by the SCF. In this definition, the restriction that a "child" of a parent in a census family must be under the age of 25 has been added. There must now also be a parent-child relationship (guardian relationships such as aunt or uncle are not sufficient). The previous restriction that the child must never have been legally married has been dropped. Data drawn from the SCF still use the earlier definition.

Persons "not in census families" are those living alone, living with unrelated individuals, or living with relatives but not in a husband-wife or parent-unmarried child (including guardianship-child) relationship.

By definition, all persons who are members of a census family are also members of the same economic family.

Family income
Family income is the sum of income of each adult in the family as defined above. Household income is likewise the sum of incomes of all adults in the household. Family and household membership is defined at a particular point in time, while income is based on the entire calendar year. The family members or "composition" may have changed during the reference year, but no adjustment is made to family income to reflect this.

SLID defines households and families according to the living arrangements on December 31 of the reference year, while SCF defined them at the time of the survey, which was the following April. Residents of Canada are also defined at those points in time. This timing difference is not believed to have a major impact.

The manner in which relationship or membership information is collected differs between the two surveys, but both approaches should yield the same results. The SCF information was taken from the Labour Force Survey and was the relationship of each person to a specific individual, called the reference person. SLID collects the relationship between every pair of individuals in a household.

Head of family
SCF has a concept of "head of family" which does not exist in SLID (see "Major income earner"). Unlike the concept of major income earner which SLID uses, it is based on relationships, rather than who receives income and of what type or how much. The following rules determine the head of family. If the economic family consists of only one census family, then only the first two rules are necessary. All references to married relationships include legally married and common-law relationships.

- In families consisting of a married couple (with or without children or other relatives), the man is the "head".

- In lone-parent families with unmarried children, the parent is the "head".

- In lone-parent families with married children, the member who is mainly responsible for the maintenance of the family, as identified in a survey question, is the "head".

- In families where relationships are other than husband-wife or parent-child, normally the eldest in the family is considered the head.

Major income earner
This characteristic is important for the derivation of detailed family types (see "Family classification"). The SCF used the concept of "head of family". For each household and family, the major income earner is the person with the highest income before tax, with one exception: a child living in the same census family as his/her parent(s) cannot be identified as the major income earner of the census family (this does not apply to economic families).

For persons with negative total income before tax, the absolute value of their income is used, to reflect the fact that negative incomes generally arise from losses "earned" in the market-place and are not meant to be sustained. In the rare situations where two persons have exactly the same income, the older person is the major income earner.

Family classification
SLID has adopted the basic classification used in SCF, although other family types can be derived using the SLID internal files. SLID uses the "major income earner" as opposed to

"head of family", where these concepts are relevant (see the notes following the classification), but this is believed to have a minimal impact.

Table B
Classification of family types

Economic families (or Census families), 2 persons or more
- Elderly families
  - Married couples
  - Other elderly families
- Non-elderly families
  - Married couples without children
    - No earner
    - One earner
    - Two earners
  - Two-parent families with children
    - No earner
    - One earner
    - Two earners
    - Three or more earners
  - Married couples with other relatives
  - Lone-parent families
    - Male lone-parent families
    - Female lone-parent families
      - No earner
      - One earner
      - Two or more earners
  - Other non-elderly families

Unattached individuals (or Persons not in census families)
- Elderly male
  - Non-earner
  - Earner
- Elderly female
  - Non-earner
  - Earner
- Non-elderly male
  - Non-earner
  - Earner
- Non-elderly female
  - Non-earner
  - Earner

Within this classification, the following definitions apply. Note that wherever the term "major income earner" is used, the term "head of family" should be substituted in the case of SCF data.

Elderly family: The major income earner is aged 65 or over.

Non-elderly family: The major income earner is under age 65.

Married couples/Spouses: Married couples, including legally married, common-law and same-sex relationships, where one of the spouses is the major income earner.

Children: A child or children (by birth, adopted, step, or foster) of the major income earner under age 18. Other relatives may also be in the family.

Lone-parent family: Includes at least one child as defined above. Families where the parent is 65 years or older are excluded.
Relative: A person related to the major income earner by blood, marriage, adoption or common-law.

Other relative: A person in the economic family who is not the major income earner nor his/her spouse or child under age 18.

Analytical Concepts

Current dollars versus constant dollars
"Current dollars" are what we usually mean when we refer to a currency in the current time period. The term "constant dollars" refers to dollars of several years expressed in terms of their value ("purchasing power") in a single year, called the base year. This type of adjustment is done to eliminate the impact of widespread price changes. Current dollars are converted to constant dollars using an index of price movements. The most widely used index for household or family incomes, provided that no specific uses of the income are identified, is the Consumer Price Index (CPI), which reflects average spending patterns by consumers in Canada.

The following table shows the annual rates of the Consumer Price Index. To convert current dollars of any year to constant dollars, divide them by the index of that year and multiply them by the index of the base year you have chosen (remember that the numerator contains the index value of the year you want to move to). For example, using this index, $10,000 in 1997 would be $10,548 in 2000 constant dollars ($10,000 × 113.5/107.6 = $10,548).

Table C
Consumer Price Index, annual rates, 1992=100

1980	52.4	1991	99.5
1981	58.9	1992	100.0
1982	65.3	1993	101.8
1983	69.1	1994	102.0
1984	72.1	1995	104.2
1985	75.0	1996	105.9
1986	78.1	1997	107.6
1987	81.5	1998	108.6
1988	84.8	1999	110.5
1989	89.0	2000	113.5
1990	93.5	2001	116.4

Earner/Income recipient
An earner is a person who received income from employment (wages and salaries) and/or self-employment during the reference year. The term income recipient is generally used for someone who received a positive (or negative) amount of income of any given type.

Mean income (Average income)
The mean or average income is computed as the total or "aggregate" income divided by the number of units in the population. It offers a convenient way of tracking aggregate income while adjusting for changes in the size of the population.

There are two drawbacks to using average income for analysis. First, since everyone's income is counted, the mean is sensitive to extreme values: unusually high income values will have a large impact on the estimate of the mean income, while unusually low ones, i.e. highly negative values, will drive it down. (See also "Recipients versus non-recipients" and "Negative values".) Secondly, it does not give any insight into the allocation of income across members of the population. For this, measures such as percentiles or Gini coefficients may be used.

Recipients versus non-recipients (Zero values)
For every table showing average incomes, it must be kept in mind whether non-recipients of that type of income are included or excluded from the population. In the case of total family income, the difference of including or excluding units with zero income is small since there are very few such families. However, if one is interested in the average amount of individual self-employment earnings, the value will be quite different if one includes those persons who were not self-employed. Zero values are included in all tables focusing on the three main income concepts (market, total and after-tax income), government transfers and taxes. Zero values are excluded in table T402.

Negative values
Negative income amounts can arise in two ways: net losses from self-employment (expenses exceed receipts), or net investment losses (losses exceed gains). As with zero values, negative values can have a large impact on results. In general, the published income tables treat negative values no differently than positive values, but there are a few exceptions: for the calculation of both Gini coefficients and the low income gap, negative values are converted to zeroes; and in the derivation of the major income earner of a family or household, the absolute value is used instead (see "Major income earner" under "Family definitions").

Percentiles
Income percentiles like quintiles and deciles are a convenient way of categorizing units of a given population from lowest income to highest income for the purposes of drawing conclusions about the relative situation of people at either end or in the middle of the scale. Rather than using fixed income ranges, as in a typical distribution of income, it is the fraction of each population group that is fixed.

First, all the units of the population, whether individuals or families, are ranked from lowest to highest by the value of their income of a specified type, such as after-tax income. Then the ranked population is divided into five groups of equal numbers of units, called quintiles. Analogously, dividing the population ranked by income into ten groups, each comprising the same number of units, produces deciles.

Most analyses should be carried out on the people of different percentiles within one population distribution. Care should be taken in making comparisons between percentiles that resulted from different distributions, because any difference in either the population or the income concept used to rank units could have a large effect. It is probable that both the income ranges represented by each percentile and the people making up each percentile will be different.

Median income
The median income is the value for which half of the units in the population has lower incomes and half has higher incomes. To derive the median value of income, units are ranked from lowest to highest according to their income and then separated into two equal-sized groups. The value that separates these groups is the median income (50th percentile).

Because the median corresponds exactly to the midpoint of the income distribution, it is not, contrary to the mean, affected by extreme income values. This is a useful feature of the median, as it allows one to abstract from unusually high values held by relatively few people.

Since income distributions are typically skewed to the left – that is, concentrated at the low end of the scale – median income is usually lower than mean income.

Implicit rate of government transfers or taxes

The implicit rate of either transfers or taxes, as the case may be, is a way of showing the relative importance of transfers received or taxes paid for different families or individuals. This concept is similar, but not identical, to the effective rate of taxation. For a given individual or family, the effective rate is the amount of transfers/taxes expressed as a percentage of their income, usually market income, total income, or after-tax income. The implicit rate for a given population is the average (or aggregate) amount of transfers/taxes expressed as a percentage of their average (or aggregate) income.

Family size adjustment (Equivalence scale)

When comparing family incomes to study such things as income adequacy or socio-economic status, one often wants to take the family size into account. Basically stated, the income amount itself is not sufficient to understand a family's financial well-being without knowing how many people are sharing it. Two approaches have been used to help with the analysis of family income. One is to produce data by detailed family types, so that within a given family type, differences in family size are not significant. In fact, many income measures have been crossed by detailed family types in the published tables.

The other way to take into account family size is to adjust the income amount, for the purposes of analysis only. The major challenge of this approach is to select an appropriate adjustment factor. While there is no single best method, it is still better to apply some kind of adjustment factor rather than no adjustment at all.

The simplest method is to use per capita income, that is, to divide the family income by the family size. A limitation of per capita income, however, is that it tends to underestimate economic well-being for larger families as compared to smaller families. This is due to the fact that it assumes equal living costs for each member of the family, but some costs, primarily those related to shelter, decrease proportionately with family size (they may also be lower for children than for adults). For example, the shelter costs for an adult married couple with no children are arguably not much more than those for an adult living alone.

To take such economies of scale into account, it is common to use an "equivalence scale" to adjust family incomes. Instead of implicitly assuming equal costs for additional family members as the per capita approach does, the equivalence scale is a set of decreasing factors assigned to the first member, the second member, and so on. Dividing the income value by the sum of the factors assigned to each member derives the adjusted income amount for the family.

There is no single equivalence scale in use in Canada. The one used in the published income tables and in concepts such as the Low Income Measure (LIM) has, however, achieved a high degree of acceptance. In this equivalence scale, the factors are as follows:

- the oldest person in the family receives a factor of 1.0;

• the second oldest person in the family receives a factor of 0.4;

• all other family members aged 16 and over each receive a factor of 0.4;

• all other family members under age 16 receive a factor of 0.3.

For example, this translates into a total factor for dividing income of just 1.4 for a married couple instead of 2.0 (the family size). Such a family with total income of $56,000 would be considered to have a standard of living equivalent to an adult living alone with a total income of $40,000, as compared to an adult with $28,000 when calculated on a per capita basis.

Gini coefficient
The Gini coefficient measures the degree of inequality in an income distribution. Gini coefficients are published for a variety of income concepts such as market income, total income and after-tax income, and are used to compare the uniformity of income allocation between different income concepts across different populations or within the same population over time.

Values of the Gini coefficient can range from 0 to 1. A value of zero indicates income is equally divided among the population with all units receiving exactly the same amount of income. At the opposite extreme, a Gini coefficient of 1 denotes a perfectly unequal distribution where one unit possesses all of the income in the economy. A decrease in the value of the Gini coefficient can, by and large, be interpreted as reflecting a decrease in inequality, and vice versa. As a rough rule of thumb when using data from SLID or SCF at the Canada level, a difference of 0.01 or more between two Gini coefficients is considered statistically significant.

Low Income Definitions

Low income cutoff (LICO)
Low income cutoffs (LICOs) are established using data from the Family Expenditure Survey, now known as the Survey of Household Spending. They convey the income level at which a family may be in straitened circumstances because it has to spend a greater proportion of its income on necessities than the average family of similar size. Specifically, the threshold is defined as the income below which a family is likely to spend 20 percentage points more of its income on food, shelter and clothing than the average family. There are separate cutoffs for seven sizes of family – from unattached individuals to families of seven or more persons – and for five community sizes – from rural areas to urban areas with a population of more than 500,000.

Calculation of low income cutoffs
The first step in the production of a set of low income cutoffs is to calculate the average proportion of income that a family spends on food, shelter and clothing. The 1992 Family Expenditure Survey found that, on average, families spend 44% of their after-tax income (and 35% of their total "before-tax" income) on these necessities. Then, 20 percentage points are added, giving 64% of after-tax income. This is done on the grounds that a family spending more than this proportion of its income on necessities is significantly worse off than the average family. The final step is to look at the distribution of income by expenditure and determine, using a regression line, the level of income at which a family tends to spend 20 percentage points more than the average on the necessities of food, shelter and clothing.

Updating and rebasing the low income cutoffs

There are two reference years that play a part in the calculation of a set of low income cutoffs: the base year and the income reference year. The base year supplies the average spent on food, shelter and clothing. This percentage is used to derive a set of cutoffs that are suitable for use with income data from that year. Cutoffs for other income reference years may be obtained by applying the corresponding Consumer Price Index (CPI) inflation rate to the basic set of cutoffs.

Using the CPI to update the cutoffs takes inflation into account, but does not reflect any changes that might occur over time in the average spending on necessities. To measure these changes, Statistics Canada has developed a new set of spending averages after each Family Expenditure Survey. These are referred to as "bases" because the average spending on necessities in that base year drives the calculation of the cutoffs. The two most recent base years are 1992 and 1986. Cutoffs based on 1992 are most commonly applied by data users and are available for the income reference years from 1980 onwards.

Low income rate

Low income rates can be calculated for persons or for families. In either case, the income that is compared to the cutoff is the income of the entire economic family. "Persons in low income" should be interpreted as persons who are part of low income families including persons living alone whose income is below the cutoff. Similarly, "children in low income" means "children who are living in low income families". In other words, all members of an economic family have the same low income status, but they are counted separately when person-based low income rates are calculated.

To calculate the low income rates, the family size and community size are used to find the appropriate cutoff. Then the family income is compared to that cutoff. If a family low income rate is being calculated, then the family is counted as being in low income if its income is less than the cutoff. If a person low income rate is being calculated, then all persons in the family are counted as being in low income if the family income is less than the cutoff.

Use of after-tax and before-tax LICOs

The average portion of income that families spend on food, shelter and clothing, which figures prominently in the low income cutoffs, is undoubtedly a useful gauge of economic well-being no matter which income concept is used. The choice of after-tax income or total income – or even market income for that matter – depends on whether one wants to take into account the added spending power that a family gets from receiving government transfers and its reduced spending power from paying taxes.

Statistics Canada produces two sets of low income cutoffs and corresponding rates – those based on total income (i.e., income including government transfers, before the deduction of income taxes) and those based on after-tax income.

The choice to highlight after-tax rates was made for two main reasons. First, income taxes and transfers are essentially two methods of income redistribution. The before-tax rates only partly reflect the entire redistributive impact of Canada's tax/transfer system, by including the effect of transfers but not the effect of income taxes. Second, since the purchase of necessities is made with after-tax dollars, it is logical to use people's after-tax income to draw conclusions about their overall economic well-being.

A note about the calculation of before-tax versus after-tax low income cutoffs: the derivation of each set of cutoffs is done independently. There is no simple relationship, such as the average amount of taxes payable, that distinguishes the two levels. Instead, the entire calculation of cutoffs is done twice – both on a before-tax basis and on an after-tax basis.

Differences in after-tax rates and before-tax rates
After-tax low income cutoffs, and the resulting after-tax rates, have been published back to 1980. The number of people falling below the cutoffs has been consistently lower on an after-tax basis than on a before-tax basis. This result may appear inconsistent at first glance, since incomes after tax cannot be any higher than they are before tax, considering that all transfers, including refundable tax credits, are included in the definition of "before-tax" total income. However, with a relative measure of low income such as the LICO, this result is to be expected with any income tax system which, by and large, taxes those with more income at a higher rate than those with less. "Progressive" tax rates, as they are often called, make the distribution of income more compressed. Therefore, some families that are in low income before taking taxes into account are relatively better off and are not in low income on an after-tax basis.

Low income gap
The low income gap, previously called "low income deficiency", is the amount that a low income family falls short of the relevant low income cutoff. For the calculation of this gap, negative incomes are treated as zero.

For example, a family with an income of $15,000 and a relevant low income cutoff of $20,000 would have a low income gap of $5,000. In percentage terms this gap would be 25%. The average gap for a given population, whether expressed in dollar or percentage terms, is the average of these values as calculated for each unit.

Market basket measure (MBM)
Human Resources Development Canada has been collaborating with the provincial and territorial ministries of social services to develop a "market basket measure" (MBM). The approach is to cost out a basket of necessary goods and services including food, shelter, clothing and transportation, and a multiplier to cover other essentials. The results would define levels of income needed to cover the cost of the basket.

The same argument that can be made for using after-tax low income rates can be made for using after-tax income to compare to the MBM thresholds. That is, a measure of well-being should take into account what is actually available to spend. The income concept that has been proposed for comparisons with the MBM thresholds goes even further than after-tax income by also removing other non-discretionary expenses such as support payments, work-related child care costs and employee contributions to pension plans and to Employment Insurance. Statistics Canada has started to collect some of the data necessary to produce rates based on the market basket measure.

This type of measure is often called an "absolute" measure, even though there is clearly judgement involved in specifying the contents of the basket of goods and services. Nevertheless, the line is absolute in the sense that it does not depend directly on the distribution of income.

On Poverty and Low Income

Ivan P. Fellegi
Chief Statistician of Canada

Recently the news media have provided increasing coverage of Statistics Canada's low income cutoffs and their relationship to the measurement of poverty. At the heart of the debate is the use of the low income cutoffs as poverty lines, even though Statistics Canada has clearly stated, since their publication began over 25 years ago, that they are not. The high profile recently given to this issue has presented Statistics Canada with a welcome opportunity to restate its position on these issues.

Many individuals and organizations both in Canada and abroad understandably want to know how many people and families live in "poverty", and how these levels change. Reflecting this need, different groups have at different times developed various measures which purported to divide the population into those who were poor and those who were not.

In spite of these efforts, there is still no internationally-accepted definition of poverty unlike measures such as employment, unemployment, gross domestic product, consumer prices, international trade and so on. This is not surprising, perhaps, given the absence of an international consensus on what poverty is and how it should be measured. Such consensus preceded the development of all other international standards.

The lack of an internationally-accepted definition has also reflected indecision as to whether an international standard definition should allow comparisons of well-being across countries compared to some international norm, or whether poverty lines should be established according to the norms within each country.

The proposed poverty lines have included, among others, relative measures (you are poor if your means are small compared to others in your population) and absolute measures (you are poor if you lack the means to buy a specified basket of goods and services designated as essential). Both approaches involve judgmental and, hence, ultimately arbitrary choices.

In the case of the relative approach, the fundamental decision is what fraction of the overall average or median income constitutes poverty. Is it one-half, one-third, or some other proportion? In the case of the absolute approach, the number of individual judgements required to arrive at a poverty line is far larger. Before anyone can calculate the minimum income needed to purchase the "necessities" of life, they must decide what constitutes a "necessity" in food, clothing, shelter and a multitude of other purchases, from transportation to reading material.

The underlying difficulty is due to the fact that poverty is intrinsically a question of social consensus, at a given point in time and in the context of a given country. Someone acceptably well off in terms of the standards in a developing country might well be considered desperately poor in Canada. And even within the same country, the outlook changes over time. A standard of living considered as acceptable in the previous century might well be viewed with abhorrence today.

It is through the political process that democratic societies achieve social consensus in domains that are intrinsically judgmental. The exercise of such value judgements is certainly not the proper role of Canada's national statistical agency which prides itself on its objectivity, and whose credibility depends on the exercise of that objectivity.

In Canada, the Federal/Provincial/Territorial Working Group on Social Development Research and Information was established to create a method of defining and measuring

poverty. This group, created by Human Resources Development Canada and social services ministers in the various jurisdictions, has proposed a preliminary market basket measure of poverty – a basket of market-priced goods and services. The poverty line would be based on the income needed to purchase the items in the basket.

Once governments establish a definition, Statistics Canada will endeavour to estimate the number of people who are poor according to that definition. Certainly that is a task in line with its mandate and its objective approach. In the meantime, Statistics Canada does not and cannot measure the "level of poverty" in Canada.

For many years, Statistics Canada has published a set of measures called the low income cutoffs. We regularly and consistently emphasize that these are quite different from measures of poverty. They reflect a well-defined methodology which identifies those who are substantially worse off than the average. Of course, being significantly worse off than the average does not necessarily mean that one is poor.

Nevertheless, in the absence of an accepted definition of poverty, these statistics have been used by many analysts to study the characteristics of the relatively worst off families in Canada. These measures have enabled us to report important trends, such as the changing composition of this group over time. For example, 20 to 30 years ago the elderly were by far the largest group within the "low income" category, while more recently lone-parent families headed by women have grown in significance.

Many people both inside and outside government have found these and other insights to be useful. As a result, when Statistics Canada carried out a wide-ranging public consultation a decade ago, we were almost unanimously urged to continue to publish our low income analyses. Furthermore, in the absence of a generally accepted alternative methodology, the majority of those consulted urged us to continue to use our present definitions.

In the absence of politically sanctioned social consensus on who should be regarded as "poor", some people and groups have been using the Statistics Canada low income lines as a de facto definition of poverty. As long as that represents their own considered opinion of how poverty should be defined in Canada, we have no quarrel with them: all of us are free to have our own views. But they certainly do not represent Statistics Canada's views about how poverty should be defined.

Comparisons between data up to 1995 and data since 1996

In all tables two data sources have been merged into a single time series. Data up to and including 1995 are drawn from the Survey of Consumer Finances (SCF, last conducted for reference year 1997), and data for 1996 and onwards are drawn from the Survey of Labour and Income Dynamics (SLID).

Different surveys will produce slightly different estimates on the same topics due to a variety of factors. Every attempt was made to minimize and monitor these differences between the two income surveys, while nonetheless making some important improvements in survey practices. Before replacing the SCF series with SLID, a careful study was done on the overlapping reference years, particularly the years 1996 and 1997, as SLID only acquired its full sample size in 1996. The results of the study are contained in the Income Statistics Division research paper, *A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF) 1993-1997: Update* (75F002MIE99007). All ISD research papers are available free of charge on the Statistics Canada internet site (www.statcan.ca).

In short, it was found that the two surveys told essentially the same story for all of the main income concepts. It is still possible, nonetheless, that for some characteristics the data trends could reveal a "break" as a result of the change in survey. Such a break would likely appear as a noticeable upward or downward shift in a data series between the years 1995 and 1996. It represents a change in the data which is attributable to the two surveys having different samples and different methods (such as the use of tax data in the case of SLID), rather than a true change in the characteristics of the population. Users are advised to take note of the following survey differences which are known to exist and to have had an impact on the data trends at some detailed levels.

Better coverage of small income amounts
One notable improvement that occurred as a result of new survey techniques introduced in SLID is better coverage of small income amounts received by respondents. It has been observed in surveys conducted by questionnaire that respondents tend to forget or neglect small income amounts they received in the past. This means an underestimation of income in general, and in particular, it means that many people who received a small amount of income instead report no income at all (there are differences, however, depending on whether the income concept includes or excludes government transfers).

The use of administrative income tax files in SLID for the majority of sample respondents means that there is considerably better coverage of non-zero amounts of income, and in general, a greater number of recipients of most kinds of income. Another technique used by SLID which may have improved coverage is that, even for respondents who report income by interview instead of via their tax records, there are two chances to prompt them for income sources, and therefore a greater likelihood of capturing an amount. This is because some income concepts are touched on in the January interview and then covered in the May interview, where it is possible to remind the respondent of a positive response in January. The types of income for which such "dependent interviewing" is used are earnings (from employment or self-employment), employment insurance benefits, social assistance, and workers' compensation.

Detailed family types
The standard published "detailed family types" for economic families have changed in one regard. In the SCF, they are derived with reference to the "head of family". In SLID, the same categories are used but in reference to the "major income earner". See also "Major income earner" under "Family definitions" in the section on "Notes and definitions". SLID dropped the concept of head of family entirely, as it has little relevance in a modern context. But some sort of prioritization of people within a family is useful to uniquely identify the type of family, even if it is somewhat arbitrary.

The change in family concepts resulting from the transition from SCF to SLID has not affected data produced for the entire population of families consisting of two or more persons. However, for some of the detailed family types, the estimated number of families underwent a one-time increase or decrease between 1995 and 1996. Without drawing conclusions about the precise net effects of these changes, the following points can be made.

First, whereas the previous definition always gave husbands the status of head of family rather than wives, with the major income earner concept there is no distinction by sex, and it is possible for the wife to qualify. Since it still holds that wives are on average younger than husbands at least for older couples, this has caused a shift from elderly families to non-elderly families.

Second, the head of family concept gave preference to parents over their adult children and, where there is no husband-wife or parent-child relationship in the family, it gave preference to older members over younger ones. Now, younger adults are much more likely to qualify as major income earners than they did as heads of families. As a result, we see significant decreases in the number of "other elderly families" and "married couples with other relatives", and a large increase in the number of "other non-elderly families". (See the section "Family definitions" for the precise definitions of family types.)

Comparisons with previous editions

The data for years prior to 2000 are not necessarily directly comparable to those of the 1999 edition. For example, dollar amounts are always expressed in constant dollars of the latest reference year. (See "Current dollars versus constant dollars" under "Analytical Concepts".)

The Survey of Labour and Income Dynamics uses estimates of the target population - which are derived independently from the survey – as benchmarks for producing survey estimates. These population estimates start with a Census and are then updated using administrative data to reflect the current population of Canada. Using these population counts reduces the sampling error and coverage bias of survey estimates. It also provides consistency of estimates across household surveys. Accurate population numbers are crucial in determining estimates from a sample survey like SLID. In order to translate the results of the survey into population estimates, each individual in the sample is assigned a weight indicating the number of persons in the population represented by that sample member.

Previously, weights were derived that respected population totals by province, age and sex. In addition, the weighting strategy now incorporates population controls for household size and economic family size.

6. Sources, Methods and Estimation Procedures

Background

The statistics contained in this publication were derived from the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID). For many years, SCF constituted the primary source of data on family income in Canada. In 1993, Statistics Canada introduced a new survey, SLID, with much the same objectives but of longitudinal rather than cross-sectional nature. Statistics Canada closely monitored the comparability of these two surveys and determined that they did indeed produce comparable results. Starting with the 1998 reference year, the SCF was no longer conducted. Additional information on the comparability of the SLID and SCF can be obtained in *Bridging Two Surveys: An Integrated Series of Income Data from SCF and SLID, 1989-1997* or in *A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF) 1993-1997: Update* (see also "Related Products and Services").

Methodology

Survey content

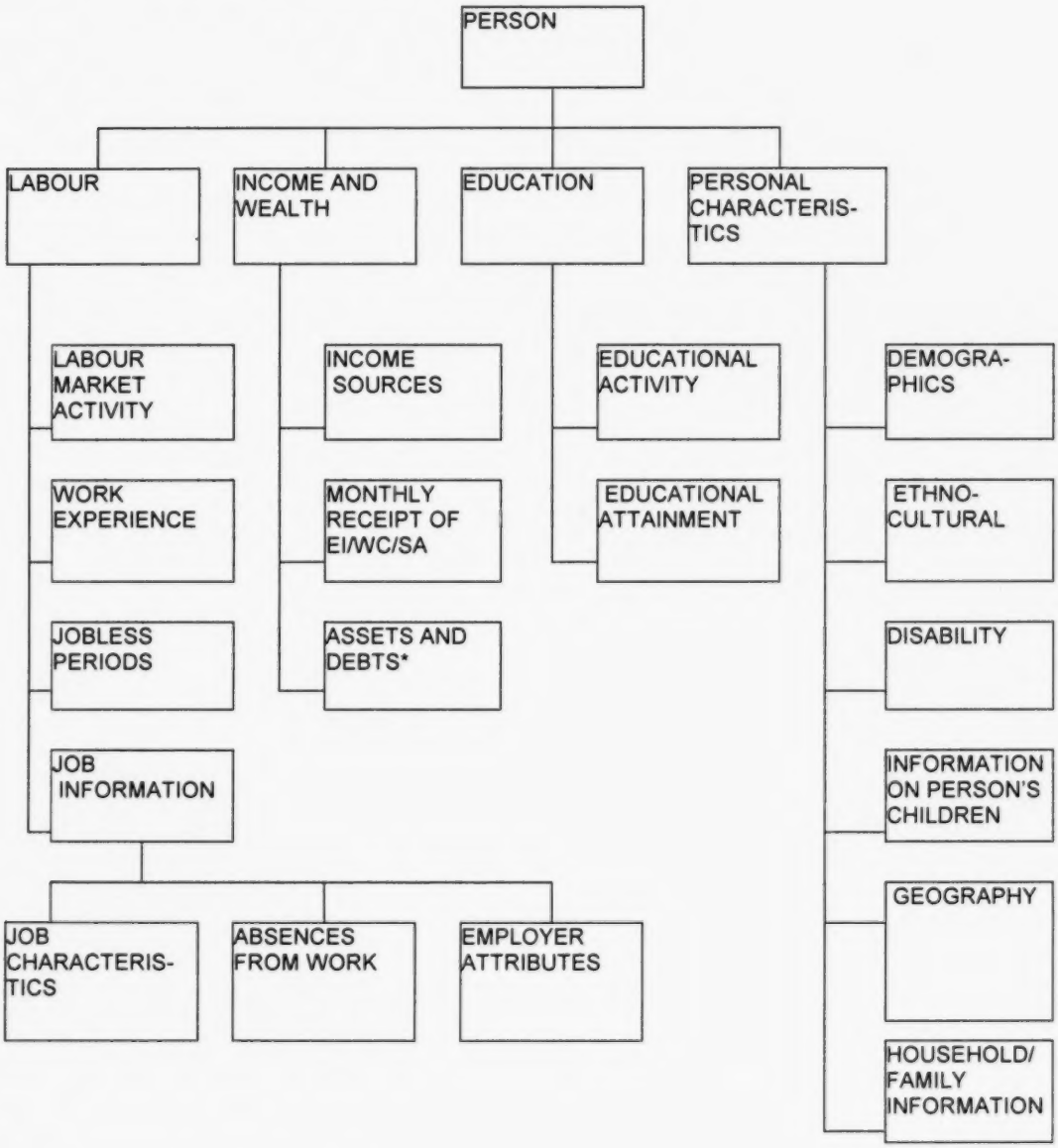
The SCF was an annual survey, conducted each April (but discontinued after April 1998) as a supplement to the Labour Force Survey (LFS), and designed to produce cross-sectional statistics on income by detailed sources. Information on labour force experience and demographic characteristics such as education, family relationships and household composition was also collected, primarily by using data collected for the LFS.

SLID was designed to capture changes in the economic well-being of individuals and families over time and the determinants of labour market and income changes. The survey supports analysis on transitions into and out of the labour force associated with the life cycle or with the business cycle; on the impact of family events on labour market activity and remuneration; on the determinants of income instability; on what triggers shifts into and out of low income and on changes in the composition of income through time. Since SLID additionally carries a broad selection of human capital variables, it is also used for studies of such topics as gender wage and earnings gaps.

The major content themes of SLID are illustrated in the following chart.

Chart A:

ORGANIZATION OF CONTENT



* Not yet included in survey content

Survey universe
SCF and SLID are household surveys that target essentially the same population. Both surveys cover all individuals in Canada, excluding residents of the Yukon, the Northwest Territories and Nunavut, residents of institutions and persons living on Indian reserves. Overall, these exclusions amount to less than 3 percent of the population.

The sample
The samples for SLID and SCF are selected from the monthly Labour Force Survey (LFS) and thus share the latter's sample design. The LFS sample is drawn from an area frame and is based on a stratified, multi-stage design that uses probability sampling. The sample is composed of six independent samples. These samples are called rotation groups because each month one sixth of the sample (or one rotation group) is replaced.

The SCF was conducted each year as a supplement to the April LFS using two-thirds of the regular sample (four rotation groups). In total, approximately 35,000 households were surveyed. The SLID sample is composed of two panels. Each panel consists of two LFS rotation groups and includes roughly 15,000 households. A panel is surveyed for a period of six consecutive years. A new panel is introduced every three years. Thus two panels are always overlapping, resulting in a combined cross-sectional sample comparable in size to that of the SCF. The following diagram illustrates how and when panels overlap.

Chart B: Overlapping design of SLID sample

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Panel 1											
			Panel 2								
						Panel 3					
									Panel 4		

Data collection
The reference period for the SCF was the previous calendar year. Income questionnaires were mailed out to selected households prior to the April LFS. Information collected through this supplementary income survey, along with demographic and labour market data amassed by the LFS that month, constituted the SCF database.

For each sampled household in SLID, up to 12 interviews are conducted over a six-year period. Every year in January, interviewers collect information regarding respondents' labour market experiences during the previous calendar year. Information on educational activity and family relationships is also collected at that time. The demographic characteristics of family and household members represent a snapshot of the population as of the end of each calendar year.

Every May information on income is collected from the same sampled households. The income interview is deferred until May to take advantage of income tax time when respondents are more familiar with their income situation. As in the SCF, the reference period for income is the previous calendar year.

To reduce response burden, respondents can give Statistics Canada permission to use their T1 tax information for the purposes of SLID. Those who do so are only contacted for the labour interviews. Over 80% of SLID's respondents give their consent to use their administrative records.

Both SCF and SLID interviews are conducted over the telephone using computer-assisted interviewing (CAI). The interviewer reads the questions as they appear on the computer screen and keys in the reported information. Skip-patterns and edits are built into the collection software, allowing interviewers to immediately detect and resolve response inconsistencies. Collection of date-related information (e.g., employment spells, jobless spells, interruption of work), is greatly improved by the use of such an interactive data capture technique. Another advantage of the CAI technology is the feeding back of details from the previous interview, helping respondents to recall past events.

Proxy response is accepted in the SCF and SLID. This procedure allows one household member to answer questions on behalf of any or all other members of the household, provided he or she is willing to do so and is knowledgeable.

Data quality
There are two types of errors inherent in sample survey data, namely, sampling errors and non-sampling errors. The reliability of survey estimates depends on the combined impact of sampling and non-sampling errors.

Sampling errors
Sampling errors occur because inferences about the entire population are based on information obtained from only a sample of the population. The results are usually different from those that would be obtained if information were collected from the whole population. Errors due to the extension of conclusions based on the sample to the entire population are known as sampling errors. The sample design, the variability of the population characteristics measured by the survey, and the sample size determine the magnitude of the sampling error. In addition, for a given sample design, different methods of estimation will result in sampling errors of different sizes.

Standard error and coefficient of variation
A common measure of sampling error is the standard error (SE). The standard error measures the degree of variation introduced in estimates by selecting one particular sample rather than another of the same size and design. The standard error may also be used to calculate confidence intervals associated with an estimate *(Y)*. Confidence intervals are used to express the precision of the estimate. It has been demonstrated mathematically that, if the sampling were repeated many times, the true population value would lie within the confidence interval $Y \pm 2SE$ 95 times out of 100 and within the narrower confidence interval defined by $Y \pm SE$, 68 times out of 100. Another important measure of sampling error is given by the coefficient of variation, which is computed as the estimated standard error as a percentage of the estimate Y (i.e. $100 \times SE / Y$).

To illustrate the relationship between the standard error, the confidence intervals and the coefficient of variation, let us take the following example. Suppose that the estimated average income from a given source is $10,000, and that its corresponding standard error is $200. The coefficient of variation is therefore equal to 2%. The 95% confidence interval estimated from this sample ranges from $9,600 to $10,400, i.e. $10,000 ± $400. Thus it is assumed with a 95% degree of confidence that the average income of the target population is between $9,600 and $10,400.

The bootstrap approach is used for the calculation of the standard errors of the estimates. For more information on standard errors and coefficients of variation, refer to the Statistics Canada publication, *Methodology of the Canadian Labour Force Survey* (Catalogue number 71-526-XPB).

Standard errors and coefficients of variation of the estimates presented in *Income Trends in Canada* are available on request.

Suppression
Data reliability cutoffs were established based on variances of a number of different variables. In general, data values that have a coefficient of variation of less than 33% are not suppressed and can be used. Suppressed estimates have a coefficient of variation greater than 33% and are not reliable.

The suppression cutoffs are listed below. Weighted person, family and household estimates that fall below these suppression cut-offs are withheld.

Table D: Suppression cutoffs

Geography	Weighted counts
Canada	13, 000
Newfoundland and Labrador	2, 500
Prince Edward Island	1, 500
Nova Scotia	4, 000
New Brunswick	2, 500
Quebec	14, 000
Ontario	14, 500
Manitoba	6, 500
Saskatchewan	2, 500
Alberta	6, 000
British Columbia	11, 000

Non-sampling errors
Non-sampling errors generally result from human errors such as inattention, misunderstanding or misinterpretation. The impact of randomly occurring errors over a large number of observations will be minimal. Errors occurring systematically can, on the other hand, have a major impact on the reliability of estimates. Considerable time and effort is invested into reducing non-sampling errors in SLID and SCF.

Non-sampling errors may arise from a variety of sources such as coverage, response, non-response and processing errors.

Coverage error arises when sampling frame units do not exactly represent the target population. Units may have been omitted from the sampling frame (under-coverage), or units not in the target population may have been included (overcoverage), or units may have been included more than once (duplicates). Undercoverage represents the most common coverage problem.

Slippage is a measure of survey coverage error. It is defined as the percentage difference between control totals (Census population projections) and weighted sample counts. Slippage rates for household surveys are generally positive because some people that should be enumerated are missed. Slippage rates have been revised back to 1996 using the 1996 Census population projections. According to the numbers in the table below, in

2000, SLID covered 87.36% of its target population. SLID estimation procedures use Census population projections to compensate for determined slippage.

Rates are also available upon request for sex, province and age groupings.

Table E: Slippage rates in SLID

	1996	1997	1998	1999	2000
Canada (%)	10.28	11.12	11.85	12.02	12.64

Response errors may be due to many factors, such as faulty questionnaire design, interviewers' or respondents' misinterpretation of questions, or respondents' faulty reporting. Great effort is invested in SCF and SLID to reduce the occurrence of response error. Measures undertaken to minimize response errors include the use of highly-skilled and well-trained interviewers, and supervision of interviewers to detect misinterpretation of instructions or problems with the questionnaire design. Response error can also be brought about by respondents who, willingly or not, provide inaccurate responses.

Income data are especially prone to misreporting, as income is a sensitive issue and includes many items with which respondents are not always familiar. To obtain more accurate information, income data for the SCF and SLID are collected after the income tax "season" when respondents are more familiar with their tax records. Respondents receive information about the income interview prior to the interviewer's telephone call. This gives them time to consult documents and have information available at the time of the interview. Nevertheless, a comparison of data produced from the SCF with other sources suggest that certain income components such as EI benefits and self-employment earnings are under-reported in an income interview. For respondents who grant Statistics Canada permission to access their tax files (the majority of respondents), SLID collects income data directly from administrative files. This procedure reduces misreporting of income in the SLID.

Non-response errors occur to some extent in any survey for reasons such as household members being on vacation during the interview period or refusing to supply requested information, despite attempts to obtain complete response from sampled units. For these individuals, the missing data are imputed either explicitly by assigning data to each non-respondent on the basis of a similar respondent record, or implicitly by redistributing the weight of the non-respondent individual to other responding individuals. The bias introduced by non-response increases with the differences between respondent and non-respondent characteristics. Methods employed to compensate for non-response make use of information available for both respondents and non-respondents in an attempt to minimize this bias.

Processing errors can occur at various stages in the survey: data capture, editing, coding, weighting or tabulation. The computer-assisted collection method used for SLID and SCF reduces the chance of introducing capture errors because checks for consistency and completeness of the data are built into the computer application. To minimize coding, weighting or tabulation errors, diagnostic tests are carried out periodically. These tests include comparisons of results with other data sources.

Weighting
The estimation of population characteristics from a survey is based on the premise that each sampled unit represents, in addition to itself, a certain number of unsampled units in the population. A basic survey weight is attached to each record to indicate the number of units in the population that are represented by that unit in the sample. Two types of adjustment are then applied to the basic survey weights in order to improve the reliability of the estimates. The basic weights are first inflated to compensate for non-response. The non-response adjusted weights are then further adjusted to ensure that estimates on relevant population characteristics would respect population totals from sources other than the survey. The population totals used for SCF and SLID are based on Statistics Canada's Demography Division population counts for different province-age-sex groups as well as counts by household and family size. In SLID, different weights apply for cross-sectional and longitudinal estimates.

Cross-sectional representativeness of SLID
Each longitudinal sample, or "panel" in SLID initially constitutes a representative cross-sectional sample of the population. However, because the real population changes each year, whereas by design the longitudinal sample does not, the sample must be modified to properly reflect these changes to the composition of the population. This is done by adding to the sample all *new* people in the population who are found to be living with the initial respondents (and likewise dropping them from the sample if they leave at later time-points). Conversely, any original respondents who leave the target population (by moving abroad, into institutions, etc.) are given a zero weight for cross-sectional purposes. In this way, the cross-sectional sample, composed of the original respondents minus those who left the target population plus those who have entered it, is virtually fully representative of the population at each subsequent time-point. The missing group is composed of persons who have newly entered the target population and are not living with anyone who was in the target population when the most recent panel was selected. Since SLID introduces a new panel every three years, however, this group is quite small.

Response rates
High response rates are essential for the data quality of any survey and thus considerable effort is invested to encourage effective participation from SCF and SLID respondents.

For the SCF, response is calculated at the family level whereas in SLID it is calculated at the household level. In SLID, a household is considered to be "respondent" if at least one of its members responds to either the January or the May interview. Starting with the release of data for 2000 and retroactive back to 1996, there is the additional stipulation that the information on the household's composition cannot be missing for more than one year.

Within a respondent household, all members are assigned identical, positive final weights, and those members (if any) who did not respond to one or both of the collection phases will have final data that is either shown as "missing" on the final database or imputed, depending on the variable.

In the Survey of Consumer Finances (SCF) response ranged from 78.1% (1989) to 82.1% (1995), while the cross-sectional response rates in SLID range between 80.8% (2000) and 85.5% (1996).

The updated definition of respondent was introduced starting with the release of data for 2000, and applied retroactively to 1996. It had relatively little impact on response rates – the SLID response rates for 1996 to 2000 are now one to two percentage points lower than they were based on the old definition.

Response rates given in Table F have been revised back to 1996, using the new definition of a respondent household.

Table F: Response rate in SCF (1990-1995) and SLID (1996-2000)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Response Rate (%)	79.0	80.0	80.7	80.0	79.5	82.1	85.5	83.6	82.3	82.8	80.8

Imputation for non-response
Income data are imputed in SCF – and in some cases in SLID – using a "nearest neighbour" approach. This method involves identifying another individual with certain similar characteristics, who becomes the "donor" for the imputed value. SLID also uses other imputation techniques. In fact, the primary method employed for imputing income data in this survey is to use the previous year's data, updated for any changes in circumstances. Only in the absence of such data are income figures imputed using the "nearest neighbour" technique in SLID.

Amounts received through certain government programs, such as child tax benefits, the Goods and Services Harmonized Sales Tax Credit, and the Guaranteed Income Supplement, are also derived from other information. Data obtained from the tax route are complete and do not need imputation.

Comparability with other income data sources
Comparisons of figures produced from the SCF with other sources of data (Census of Population, Longitudinal Administrative Data, National Economic and Financial Accounts) reveal that certain income components, such as investment, self-employment earnings, social assistance payments and EI benefits, are under-reported in the SCF.

SLID's estimates of the number of income recipients, aggregate individual income and average family income are higher than the corresponding estimates from SCF data.

Differences between SCF and SLID income figures can be attributed to the different procedures for editing, imputation, and data collection (entirely by questionnaire for the former versus partially by linkage with T1 income tax files for the latter).

7. Related Products and Services

Canadian Statistics on the Internet

The following data are available, free of charge, on Statistics Canada's website (www.statcan.ca):

- Average Market Income by Selected Family Types, Canada, 1991-2000
- Average Total Income by Selected Family Types, Canada, 1991-2000
- Average After-Tax Income by Selected Family Types, Canada, 1991-2000
- Government Transfers and Income Tax by After-Tax Income Quintiles, Canada, 1999-2000
- Persons in Low Income Before Tax, Canada, 1991-2000
- Persons in Low Income After Tax, Canada, 1991-2000
- Distribution and Average Income of Husband-Wife Families by Number of Earners, Canada, 1991-2000

The menu path to download the above-listed tables is "Canadian Statistics" then "The People" followed by "Families, Households and Housing" and "Income".

- Average Earnings by Sex and Work Pattern, Canada, 1991-2000
- Estimated Numbers of Earners by Sex and Work Pattern, Canada, 1991-2000
- Distribution and Average Income of Husband-Wife Families by Number of Earners, Canada, 1991-2000

The menu path to download the above-listed tables is "Canadian Statistics" then "The People" followed by "Labour, Employment and Unemployment" and "Earnings".

Income in Canada, 2000 *(electronic version) 75-202-XIE ($34)*

An electronic version of the present publication is available on Statistics Canada's website (www.statcan.ca).

The menu path to download the electronic version is "Products and Services", then Downloadable publications ($34)", followed by "75-202-XIE, Income in Canada, 2000."

Income Trends in Canada, *13F0022XCB ($195)*

This annual CD-ROM, which includes over 2 million data points, is the complement to *Income in Canada, 2000*. It provides historical trends starting in 1980, for Canada, the provinces and 15 metropolitan areas. The data are presented in Beyond 20/20 format that allows users to easily view trends, create tables and chart income.

Longitudinal data from the Survey of Labour and Income Dynamics (SLID)

Starting with reference year 1998, the Survey of Labour and Income Dynamics (SLID) officially replaced the Survey of Consumer Finances (SCF) as the source of income data.

SLID is a longitudinal survey – the same people are interviewed from one year to the next for a period of six years – that began collecting data with the 1993 reference year.

The income content of the two surveys is similar, with SLID adding a large selection of variables that capture transitions in Canadians' jobs, income and family events. Therefore, SLID opens new research avenues that will provide greater insights on important issues, such as how many Canadians remain in low income situations and what makes it possible for others to emerge from periods of low income.

Paradoxically, the comprehensive data that make SLID so valuable, also makes it more complex for Statistics Canada to ensure that confidentiality of respondents is maintained.

In order to comply with the strict confidentiality provisions of the Statistics Act, SLID longitudinal data are made available through new modes of dissemination, namely:

remote access: computer program(s) are written by clients and sent electronically to Statistics Canada, where staff run the program(s) against the data base and apply confidentiality protection measures. If need be, data are suppressed from the output. Survey officers subsequently return results to clients;

on premise access: researchers under contract with Statistics Canada are given access to Regional Reference Centres across the country, where staff provides data retrieval infrastructure and implements confidentiality procedures;

research data centres: were opened in 2000 on selected university campuses across the country. These centres act as extensions of Statistics Canada and provide researchers with access to the data, while protecting confidentiality.

Public Use Microdata Files

Cross-sectional public use microdata files for 1996 to 1998 are available modeled on the Survey of Consumer Finances microdata files. It is anticipated that 1999 and 2000 will be released in 2003. No longitudinal public use microdata files are presently planned.

Research and Working Papers

Statistics Canada publishes a variety of research and working papers that are made available free of charge on its website (www.statcan.ca). Listed below is a selection of recent papers, for readers interested in income trends. Several other reports are also available.

- Effects of Self-rated Disability and Subjective Health on Job Separation *75F0002MIE2002001*
- Recent Developments in the Low Income Cutoffs *75F0002MIE2001003*
- Should the Low Income Cutoffs be Updated? A summary of feedback on Statistics Canada's discussion paper *75F0002MIE2000011*
- To What Extent are Canadians Exposed to Low Income? *75F0002MIE1999001*
- The Persistent Gap: New Evidence on the Canadian Gender Wage Gap *75F0002MIE1999008*
- A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF) 1993-1997: Update *75F002MIE1999007*

The menu path to download the above-listed papers is "Our Products and Services" then " Research papers (free)" followed by the catalogue number.

- Wives, Mothers and Wages: Does Timing Matter? *11F0019MIE2002186*
- The Performance of the 1990s Canadian Labour Market *11F0019MIE2000148*
- Why Do Children Move Into and Out of Low Income: Changing Labour Market Conditions or Marriage and Divorce? *11F0019MIE1999132*

The menu path to download the papers listed above is "Our Products and Services" then "Research papers (free)" followed by catalogue number.

SLID Documentation for Researchers

– Survey Overview – Survey of Labour and Income Dynamics *75F0011XIE*
– Survey of Labour and Income Dynamics Microdata User's Guide *75M0001GIE*

The menu path to download the above-listed working papers is "Our Products and Services" then "Free publications" followed by the catalogue number.

- SLID Electronic Data Dictionary *75F0026XIB*

The menu path to download this document is "Statistical methods " followed by "Questionnaires and data dictionaries" followed by "SLID electronic data dictionary".

Publications from the Survey of Consumer Finances

The transition from the Survey of Consumer Finances to the Survey of Labour and Income Dynamics has also triggered a revision of the income product line. With the introduction of *Income in Canada (the print and electronic editions)* and *Income Trends in Canada CD-ROM*, the following SCF publications are discontinued:

13-207-XPB Income Distribution by Size in Canada
13-210-XPB Income After Tax: Distribution by Size in Canada
13-551-XPB Low Income Cut-offs
13-569-XPB Low Income Persons
13-592-XPB Low Income After Tax
13-582-XPB Low Income Measures
13F0019XPB Low Income Measures, Low Income After Tax Cut-Offs and Low Income After Tax
Measures
13-208-XPB Census Family Incomes
12-215-XPB Characteristics of Dual-Earner Families
13-217-XPB Earnings of Men and Women

Perspectives on Labour and Income *75-001-XPE*

Perspectives on Labour and Income is a quarterly journal that features analytical articles on the latest trends. It includes a section that summarizes recent reports and studies released by Statistics Canada. Subscribing to Perspectives on Labour and Income will prove to be an
excellent way to keep up-to-date on what's new, all year long!

Client Services

For clients with more specialized data needs, custom tabulations can be produced on a cost-recovery basis. For more information or to enquire about the concepts, methods, data quality or the product line, contact Client Services (1-888-297-7355 or 613-951-7355; income@statcan.ca), Income Statistics Division.

8. Questions and Comments

If you have any questions or comments about the data in this CD-ROM product, you can contact the Income Statistics Division.

Telephone: 1-888-297-7355 or 613-951-7355
Facsimile Number: 613-951-3012
Internet: income@statcan.ca

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For questions on the software, please call the StatsCan Electronic Products Helpline at 1-800-949-9491.